

Get to
know the

i-codes

This is the first in a series of flyers exploring the differences between the Uniform and International Codes (I-Codes). Topics covered include means of egress, building uses, heights and areas, types of construction, fire-resistance-rated assemblies, accessibility, structural provisions, sprinklers, existing buildings, and the residential and mechanical codes. Additional topics may be added in 2004.

Means of Egress

About the Codes

The 2003 editions of the International Building, Residential, Mechanical and Fire Codes (I-Codes) replaced the Uniform Codes in Seattle on Aug. 15, 2004*.

Copies can be purchased from the Public Resource Center (PRC), 20th floor, Seattle Municipal Tower, 700 Fifth Ave., (206) 684-8467, or:

- WA Assn. of Building Officials
(360) 586-6725, www.wabo.org
- International Code Council (ICC)
(800) 284-4406, www.iccsafe.org

— I-Codes Training

I-Code trainings are offered by the following organizations:

- WA Assn. of Building Officials
(360) 586-6725, www.wabo.org
- International Code Council
(800) 284-4406, www.iccsafe.org
- American Inst. of Architects-Seattle, (206) 448-4938
www.aiaseattle.org
- Structural Engineers Assn. of WA
(206) 682-6026, www.seaw.org
- Building Industry Assn. of WA
(360) 352-7800, www.biaw.com
- Master Builders Assn. of King & Snohomish Counties
(425) 451-7920, www.mba-ks.com

— Technical Code Support

- Building Code
(206) 684-4630
Hours: M-F, 1 p.m.-4:15 p.m.
- Electrical Code
(206) 684-5383
Hours: M/W/F, 7:30 a.m.-5:30 p.m.
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- Energy/Mechanical Code
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Hours: M-F, 1 p.m.-4:15 p.m.

Comparing Means of Egress in the UBC and IBC

Most of the provisions for means of egress in the International Building Code (IBC) are very similar to the Uniform Building Code (UBC). The exiting system in both codes is divided into three parts: exit access, exit, and exit discharge. The IBC defines "exit" slightly differently, which results in some egress elements being categorized differently.

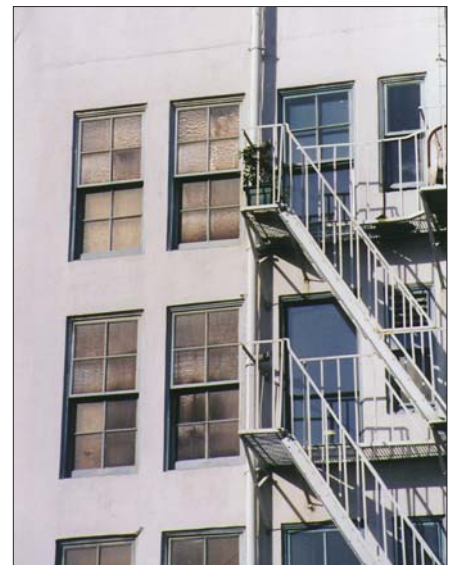
In the UBC, all exterior doors are considered to be part of the exit portion of the means of egress. In the IBC, only doors located at ground level are considered to be part of the exit. The result is that, in the UBC, exterior exit balconies and exterior exit stairways are considered part of the exit discharge. In the IBC, exterior balconies are considered part of the exit access, and exterior stairways are considered part of the exit.

The IBC Chapter 10 is formatted similarly to UBC Chapter 10. The principal difference is that the IBC chapter is divided into more sections. Both codes arrange Chapter 10's sections beginning with provisions that are generally applicable to means of egress components such as determination of occupant load, doors, and stairways. The difference between the organization of the two codes is that the IBC deals with each of these topics in a separate section, while the UBC put them all in Section 1003.

The next parts of the chapter sets out the requirements for the exit access, exits, and exit discharge. Again, the UBC used one section to cover each of these while the IBC divides them into smaller sections.

Another format difference between the two codes is the smaller number of sections with special provisions based on occupancy in the IBC. The IBC has only one such section, for assembly occupancies. The IBC has also placed the provisions for guards (called "guardrails" in the UBC) in Section 1012 in contrast to the UBC which placed them in Chapter 5.

The final section of IBC Chapter 10 is Emergency Escape and Rescue, which is found in UBC Section 310.4. These sections require that bedrooms have openable windows or doors for escape in case of fire. The IBC makes a significant change to these provisions by not requiring emergency escape openings in buildings with sprinklers. Emergency escape openings are only required in basements that have sleeping rooms.



Chapter 10 of the IBC covers requirements for exit access, exits and exit discharge.

Means of Egress: Technical Differences

This article will focus on some of the technical differences in these provisions. This is not a complete list of the differences, but we hope it highlights some of the most significant issues.

■ **Determination of occupant load (IBC Sec. 1004.1.2).**

IBC Table 1004.1.2 is the counterpart to UBC Table 10-A, determining the floor area per occupant. The IBC, however, uses both gross and net floor areas for calculating occupant load. Gross floor area is similar to the manner of calculating floor area in the UBC. It includes everything inside the building's exterior walls, except vent shafts and courts. To determine net floor area, unoccupied accessory areas, such as corridors, stairways, closets and toilet rooms are excluded.

■ **Egress width (IBC Sec. 1005).** The factors used to calculate egress width are very similar to the UBC for buildings without sprinklers. For most occupancies, stairway width is 0.3 inches times the number of occupants; for other egress components it is 0.2 inches times the number of occupants. The IBC differs from the UBC in allowing reduced width in buildings with sprinklers. For buildings with sprinklers, the stairway width factor is 0.2 inches and the factor for other egress components is 0.15.

■ **Stairway Rise and Run. (IBC Sec. 1009.3).** Stairways will be a little bit steeper under the IBC. The State of Washington chose not to keep an amendment that allowed stairways with smaller treads and taller risers. DPD is proposing to follow the State and adopt IBC Section 1009.3 without amendment. Stairways will be required to have risers no more than 7 inches high, and treads no more than 11 inches deep.

■ **Common path of egress travel (IBC Sec. 1013.3).** Common path of egress travel is defined as "that portion of exit access which the occupants are required to traverse before two separate and distinct paths of egress travel to two exits are available. Paths that merge are common paths of travel. Common paths of egress travel shall be included within the permitted travel distance." Common path of travel is limited to 75 feet in most occupancies, or 100 feet in occupancies with sprinklers. The concept of common path of egress travel is analogous to dead ends in corridors, and is meant to limit the possibility that a single fire could make both exits unusable.

■ **Intervening rooms (IBC Sec. 1013.2).** The IBC provides fewer restrictions on an egress path passing through intervening rooms, as long as the rooms are accessory to the area served by the egress path, there is a discernible path of travel to an exit, and the common path of travel provisions are satisfied.

■ **Exit separation (IBC Sec. 1014).** In the IBC, the doors to exits are required to be separated by one-half the diagonal distance of the building served, compared to forty percent of the diagonal distance in the current

Seattle Building Code (SBC). The SBC also requires the walls of exit enclosures to be at least 15 feet apart.

However, the IBC reduces the minimum separation to one-third the diagonal distance in buildings with sprinklers, and does not require a minimum separation between walls of different exit enclosures. DPD is proposing to prohibit exit enclosures from sharing a wall, but will not specify a minimum separation distance.

■ **Corridors (IBC Sec. 1016).** The IBC returns to the use of occupant load to determine whether fire-resistance-rating is required for a corridor. Except in H and R and some I occupancies, rated corridor construction is not required if the building has sprinklers. Many of Seattle's exceptions to the UBC requirements for corridor construction will be deleted from the IBC because most of Seattle's exceptions are based on the presence of sprinklers. The concept of a "hallway" as an intervening room does not appear in the IBC.

■ **Single-exit buildings (IBC Sec. 1018).** Table 1018.2 allows buildings to have one exit, provided they comply with limitations on number of stories, number of occupants and travel distance. In addition, Seattle is planning to maintain its provisions for single-exit residential buildings.

